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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/846,939	04/30/2001	Yi-Jen Cheng	3339	4655

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EXAMINER

GORDON, CARLENE MICHELLE

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 07/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/846,939

Applicant(s)

CHENG ET AL.

Examiner

Carlene Gordon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/846,939.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is responsive to the application filed on April 30, 2001.
Claims 1-7 have been submitted for examination.

Priority

2. Should applicant desire to obtain the benefit of foreign priority under 35 U.S.C. 119(a)-(d) prior to declaration of an interference, a translation of the foreign application should be submitted under 37 CFR 1.55 in reply to this action.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference character(s) mentioned in the description:

Reference number 331 of Fig. 3 is missing from the drawing.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to because References numbers 41, 42, 43, 44, 46, and 47 do not refer to the parts to Fig. 4 as disclosed in the description.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities:

Reference to Fig. 4 numbers 41, 42, 43, 44, 46, and 47 on pg. 4 of the Specification do not refer to the appropriate parts of Fig. 4 as shown in the drawings.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 6 recites the limitation "said testing item of **said logical product**" in lines 1-2 of claim 6. There is insufficient antecedent basis for this limitation in the claim.

9. Claim 7 recites the limitation "said testing item of **said analog product**" in lines 1-2 of claim 7. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sommer** (U.S. Patent No. **6,434,503**), hereafter "Sommer", and further in view of **Testa et al.** (U.S. Patent No. **5,845,234**), hereafter "Testa".

12. **As to claim 1:**

Sommer discloses a method for automatically developing a testing program of a tester including:

establishing an intellectual property comprising a tester library, a tester resource installation configuration and a testing strategy (col. 1, lines 13-23, "master program is... a library of files", "master program coordinates all testing functions", "testing configurations and patterns");

integrating said intellectual property with a product target specification, an error code list and a program transfer rule check (Sommer, Fig. 1, 102, "Device under test"; col. 3, lines 19-45);

and automatically developing a source code of said testing program (Sommer, Title, "Automatic creation of specific test programs...").

Sommer does not explicitly teach automatically developing a **source code prototype** of said testing program as claimed. Testa discloses that it was known in the art of developing test programs, at the time the applicant's invention was made, to

develop a prototype of testing program (Abstract, "program code is generated"; Fig. 3, "ATE templates 34 to generate ATE test program modules 35", col.5, lines 19-23).

Sommer and Testa are analogous art because they both pertain to the generation of test programs. One of ordinary skill in the art at the time of the invention would have been motivated to combine the efficient generation of testing program code method of Testa with the automatic creation of specific test programs method of Sommer. The motivation would have been the need in the art for creating tests programs in a platform independent manner requiring a minimal amount of data for each different platform type and avoiding the need to write new routines for each new platform, using the suggestion by Testa in col. 1, line 65 – col. 2, line 12.

13. As to claim 2:

Sommer further discloses wherein said tester is one of a digital tester and an analog tester (col. 3, lines 21-24, "semiconductor wafer tester 92", Fig. 1).

14. As to claim 3:

The rejection of claim 1 is incorporated, and further Sommer does not explicitly disclose wherein said tester library **comprises pattern file formats and source code prototypes for a plurality of known testers**. Testa discloses that it was known in the art at the time of the applicant's invention was made to include in a library, such as the one disclosed in Sommer, file pattern file formats and source code prototypes (col. 4, lines 1-4, "ATE library 17 stores ATE characterization tables and ATE templates"; col. 3,

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lines 30-39, "III ATE Characterization Tables... Native Format... Waveform Event-Based Format... Pattern Information") (col. 3, line 66 – col. 4, line 4, "plurality of ATE platforms... ATE templates").

15. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sommer and Testa as applied to claim 1 above, and further in view of **Mydill** (U.S. Patent No. **6,574,760**), hereafter "Mydill".

16. As to claim 4:

The rejection of claim 1 is incorporated, and further, Sommer and Testa do not explicitly disclose wherein said tester resource installation configuration comprises Pin electronics (PE) specification and maximum channels, a precision measurement unit IPMUI specifications, a device power supplies (DPS) specification, a time measurement unit (TMU) specification, a vector memory size specification, a system clock rate specification and an analog channel specification. Mydill discloses in an analogous testing system including parts such as: pin electronics, parametric measurement unit, and, device power supplies, and a high-clock clock where the specifications are implicitly included (Mydill, Fig. 6, "Pin Electronics ... Device Power Supplies"; col. 9, lines 39-52).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art of testing methods and programs to combine the testing method and system of Mydill with the method of generating testing program code of Sommer and

Testa. The motivation would have been to provide an approach that guarantees quality and reliability of semiconductor devices. Furthermore, it would have been obvious to combine Mydill with Sommer and Testa to provide a method flexible enough to be applied for different semiconductor product families and a wide spectrum of design and process variations as suggested by Mydill in col. 3, lines 39-44 of the article.

17. As to claim 5:

Mydill further discloses wherein said testing strategy comprises a testing item selected from one of a logical product and an analog product (col. 4, lines 7-14, "logical devices... analog testing").

18. As to claim 6:

Mydill further discloses wherein said testing item of said logical product is one selected from a group consisting of continuity test, drive/sink current test, power dissipation test, IDDQ test, input leakage current test, function pattern test and AC characteristic test (Fig. 1 shows a selection of tests including: "IDDQ... Input Leakage... Continuity").

19. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sommer, Testa, and Mydill as applied to claim 5 above, and further in view of **Toner ("A BIST Scheme for SNR, Gain Tracking, and Frequency Response Test of a Sigma-Delta ADC")**.

20. As to claim 7:

The rejection of claim 5 is incorporated where Mydill further discloses the invention may be expanded to analog testing (col. 4, lines 11-14).

Sommer, Testa, and Mydill do not explicitly disclose wherein said testing item of said analog product is one selected from a group consisting of ADC/DAC'S SNR test, THD test, Jitter/skew test, crosstalk test, eye diagram test and frequency response test. However, Toner discloses the selection of the ADC/DAC, SNR test and the frequency response test (pg. 1, col. 2, and Title). One of ordinary skill in the art at the time of the applicant's invention would have been motivated to implement the method and system of Sommer, Testa, and Mydill to include the tests of Toner. The modification would have been obvious because one of ordinary skill in the art would have been motivated to use the well-known tests for testing the analog portion of a mixed-signal integrated circuits, as shown in Toner (pg. 1, cols. 1-2).

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlene Gordon whose telephone number is (703) 605-4226. The examiner can normally be reached on Mon.-Fri. 8:30am-5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703) 305-9662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.G. / C.M.



TODD INGBERG
PRIMARY EXAMINER